

# RECLAMATION

*Managing Water in the West*

Draft Environmental Assessment

## **Poso Creek Water Company, LLC Execution of Temporary Water Service Contract for Banking and Exchange of Section 215 Water at Semitropic Water Storage District**

EA-08-26



U.S. Department of the Interior  
Bureau of Reclamation  
Mid Pacific Region  
South Central California Area Office  
Fresno, California

October 2009

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# Contents

Section 1	Purpose and Need for Action.....	1
1.1	Background.....	1
1.2	Purpose and Need .....	1
1.3	Scope.....	2
1.4	Potential Issues.....	2
Section 2	Alternatives Including the Proposed Action.....	6
2.1	No Action – Continue Present Actions.....	6
2.2	Proposed Action.....	6
Section 3	Affected Environment & Environmental Consequences.....	16
3.1	Surface Water Resources .....	16
3.2	Groundwater Resources .....	22
3.3	Land Use .....	27
3.4	Biological Resources .....	28
3.5	Cultural Resources .....	32
3.6	Indian Trust Assets .....	33
3.7	Socioeconomic Resources .....	34
3.8	Environmental Justice.....	35
3.9	Air Quality .....	36
3.10	Global Climate Change.....	37
Section 4	Consultation and Coordination .....	39
4.1	Fish and Wildlife Coordination Act (16 USC § 651 et seq.).....	39
4.2	Endangered Species Act (16 USC § 1531 et seq.).....	39
4.3	National Historic Preservation Act (16 USC § 470 et seq.) .....	39
4.4	Migratory Bird Treaty Act (16 USC § 703 et seq.) .....	39
4.5	Clean Water Act (16 USC § 703 et seq.).....	40
4.6	Clean Air Act (42 USC § 7506 (C)) .....	40
4.7	Executive Order 11988 – Floodplain Management and Executive Order 11990 - Protection of Wetlands.....	41
Section 6	List of Preparers and Reviewers .....	41
Section 7	References.....	41
<b>Figures and Tables</b>		
Figure 1-1	Westlands Water District General Location Map .....	4
Figure 1-2	Semitropic Water Storage District General Location Map (Proposed Action does not include the Stored Water Recovery Unit).....	5
Figure 2-1	Location Map .....	10
Figure 2-2	Spreading Areas .....	11
Figure 2-3	Delivery Alternatives .....	12
Figure 2-4	Delivery of Section 215 Water from Millerton Lake to Semitropic. ....	14
Figure 2-5	Delivery of banked water from Semitropic to Poso Creek, LLC via exchange.....	15
Table 3-1	Ownership and Acreage .....	20
Table 3-2	Kern Groundwater Basin Characteristics. ....	23
Table 3-3	Land Use in Semitropic Water Storage District.....	27
Table 3-4	Threatened and Endangered Species and Critical Habitat .....	29

Table 3-5 Community Characteristics by County .....	35
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## List of Acronyms, Abbreviations, and Definition of Terms

AEWSD	Arvin-Edison Water Storage District
AF	acre-foot (feet)
AFY	acre-feet per year
Banking Program	Semitropic Groundwater Banking and Exchange Program
CAA	Clean Air Act
CFR	Code of Federal Regulations
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CVC	Cross Valley Canal
CVP	Central Valley Project
Delta	Sacramento and San Joaquin River Delta
DWR	Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FKC	Friant Kern Canal
FWCA	Fish and Wildlife Coordination Act
GHG	green house gases
In-lieu	Preserving groundwater by delivering surface water in its place.
ITA	Indian Trust Assets
M&I	Municipal and Industrial
NAAQS	National Ambient Air Quality Standards
NKWSD	North Kern Water Storage District
NO <sub>x</sub>	nitrogen oxide
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
Overdraft	The reduction of groundwater storage that occurs when withdrawals from an aquifer exceed recharge.
PM <sub>10</sub>	particulate matter 10 (particles are between 2.5 and 10 micrometers)
Poso Creek, LLC	Poso Creek Water Company, Limited Liability Corporation and its associated member lands within Westlands Water District (a California Mutual Water Company)
Reclamation	Bureau of Reclamation
RRR	Reclamation Reform Act of 1982 (Public Law 97-293)
SCVWD	Santa Clara Valley Water District

Semitropic  
Section 215 Water

Semitropic Water Storage District  
Pursuant to Section 215 of the RRA, the Secretary of the Interior is authorized to contract for temporary supplies of water resulting from an unusually large water supply, not otherwise storable for project purposes, or from infrequent and otherwise unmanaged flood flows of short duration, provided such temporary water supplies do not adversely affect other authorized project purposes.

SIP  
SJVAB  
SJVAPCD  
SLC  
SLDFR  
Subsidence

State Implementation Plan  
San Joaquin Valley Air Basin  
San Joaquin Valley Air Pollution Control District  
San Luis Canal  
San Luis Drainage Feature Re-evaluation  
Sinking of the ground surface, because of pore collapse, over an aquifer that is slowly being drained by groundwater pumping.

SWID  
SWP  
SWRU  
VOC/ROG  
WWD

Shafter Wasco Irrigation District  
State Water Project  
Stored Water Recovery Unit  
Volatile Organic Compounds/reactive organic gas  
Westlands Water District

# **Section 1 Purpose and Need for Action**

## **1.1 Background**

There are 28 long-term Central Valley Project (CVP) contractors in the Friant Division. These contractors' service area is located on the eastern side of the San Joaquin Valley. Water supplied to the Friant Division contractors comes from the San Joaquin River at Millerton Lake. From Millerton Lake, water is released into the 152-mile long Friant Kern Canal (FKC) flowing south and the 36-mile long Madera Canal flowing north. Water conveyed to these contractors is categorized as either Class 1 or Class 2 water. Class 1 water is a firm supply of water (it is dependable water each year), while Class 2 water is that supply of water which can be made available subject to the contingencies for delivery from Millerton Lake and the FKC and Madera Canals in addition to the supply of Class 1 Water. The total amount of Class 1 water under contract is about 800,000 acre-feet (AF). Class 2 water is available as hydrologic conditions permit and totals about 1,401,475 AF under contract.

Pursuant to Section 215 of the Reclamation Reform Act of 1982 (RRA) (Public Law 97-293), the Secretary of the Interior is authorized to contract for temporary supplies of water resulting from an unusually large water supply, not otherwise storable for project purposes, or from infrequent and otherwise unmanaged flood flows of short duration, provided such temporary water supplies do not adversely affect other authorized project purposes. These temporary water supplies are commonly referred to as Section 215 water or surplus water.

The Bureau of Reclamation (Reclamation) has determined that unusually large water supplies may result from winter hydrology in some years such that future restricted storage capacity in Millerton Lake may create a non-storable supply of water pursuant to Section 215 of the RRA (Section 215 water). This water supply may be offered to non-CVP contractors via temporary water service contracts. Friant Division and Cross Valley CVP long-term contractors have first priority in the offering and conveyance of the Section 215 water. Non-CVP contractors have a lower priority in the offering and conveyance of Section 215 water.

Poso Creek Water Company, Limited Liability Corporation (LLC) [a California Mutual Water Company "Poso Creek, LLC"] has entered into a long-term banking agreement with Semitropic, dated April 23, 2007, in which Poso Creek, LLC is a full banking partner invested at 60,000 AF of guaranteed storage capacity in the Semitropic water bank. The term of this agreement runs through December 31, 2035. The members of Poso Creek, LLC own and/or lease land with Westlands Water District (WWD).

## **1.2 Purpose and Need**

The members of Poso Creek, LLC need a reliable source of water, especially during dry years to help reduce the impacts of water supply shortages on their lands located within WWD in any hydrologic year.

In critically dry years such as 2008 and 2009, 40 and 10 percent allocations produce a WWD base water supply of approximately 1.17 and 0.26 AF/acre, respectively for Poso Creek, LLC. This creates a shortage of about 2.33 to 3.24 AF/acre, depending upon crop, or about 15,610 to 21,710 AF over 6,700 acres.

In a critical year with minimal allocation, or no allocation, Poso Creek, LLC members could face a water shortage of the entire crop demand of 3.5 AF/acre, or about 23,450 AF over 6,700 acres. In dry to critical conditions, Poso Creek, LLC members would have to utilize existing groundwater wells within WWD to help manage the shortage, so any additional surface water made available through banking would directly offset the pumping of groundwater supplies within WWD.

### **1.3 Scope**

This environmental assessment (EA) analyzes the potential execution of a series of one-year temporary water service contracts with Poso Creek, LLC over a period of 17 years through 2026 for receipt of up to 15,000 acre-feet (AF) annually of Section 215 water from the Friant Division; the banking of the Section 215 water by Poso Creek, LLC at Semitropic for the benefit of its members; and the recovery of the banked water via an exchange. It analyzes the environmental impacts the potential execution of these contracts have on the delivery of flood flows from the Friant Division, the conveyance of the water to Semitropic, the impacts of the water storage in Semitropic and the banked water's utilization on Poso Creek, LLC's members' lands in WWD over the 17 years of the Proposed Action.

Semitropic expects to obtain the necessary permits to construct the second phase of its groundwater banking program. This new unit, the SWRU, would increase storage by 650,000 AF to a maximum of 1.65 million AF and increase recovery capacity by 200,000 AF per year (AFY) for a total guaranteed or pumpback capacity of 290,000 AFY. This means that the Semitropic Groundwater Storage Bank, including its entitlement exchange capability of up to 133,000 AFY, would be able to deliver up to 423,000 AFY of dry year yield to the California Aqueduct. In a 50 percent allocation year, the water bank's capacity is equivalent to about 18 percent of the entire State Water Project yield (Semitropic 2009).

This EA does not analyze the buildout of the Stored Water Recovery Unit (SWRU) within Semitropic as it is not a part of the Proposed Action. Therefore, this EA does not analyze the effects of banking water in the SWRU of the Semitropic's water bank, because no water from this Proposed Action can be stored in that unit.

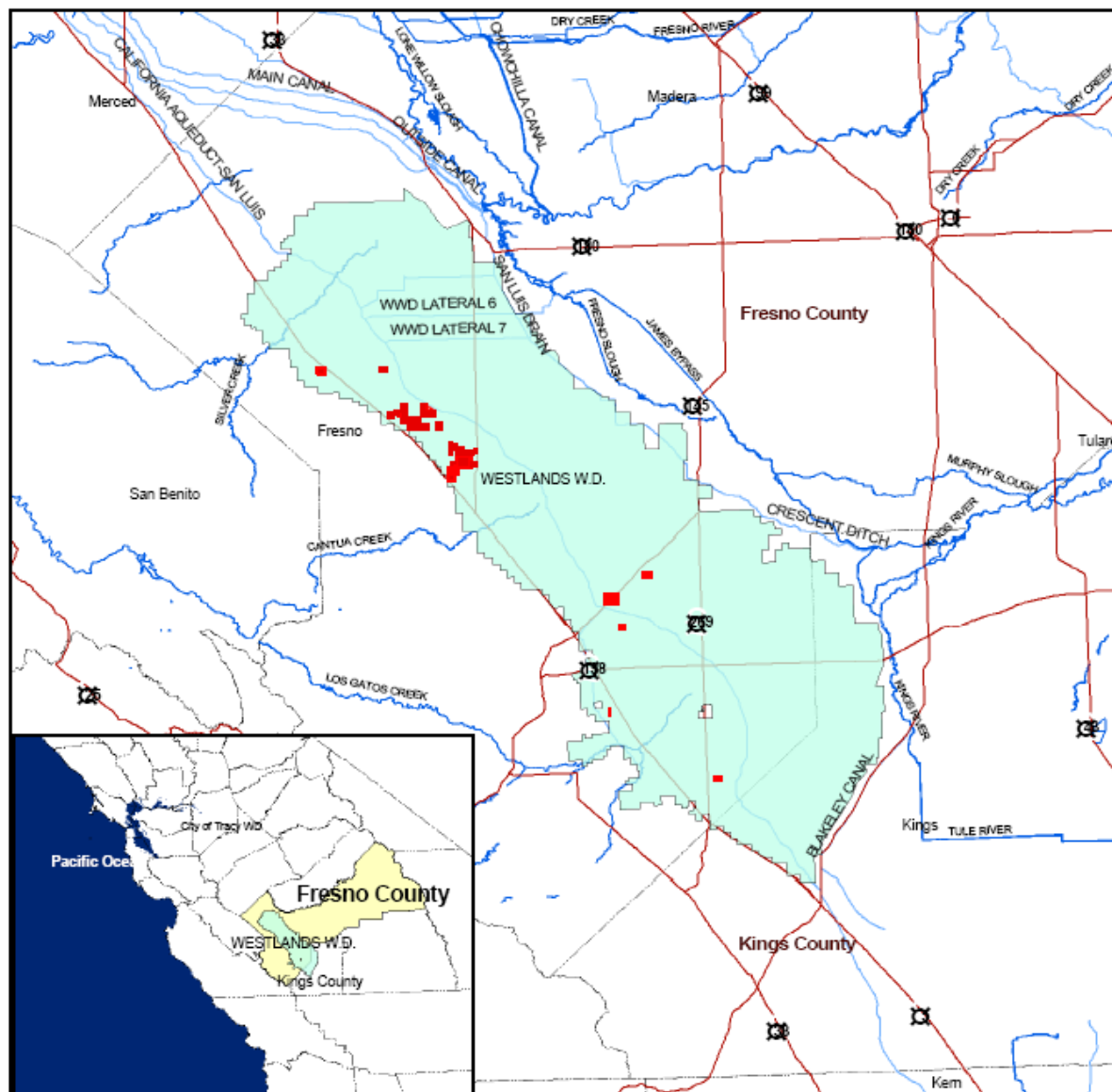
### **1.4 Potential Issues**

The resources potentially affected by the Proposed Action and therefore analyzed within this EA include:

- Surface Water
- Groundwater
- Biological Resources
- Land Use

- Cultural Resources
- Indian Trusts Assets
- Socioeconomic
- Environmental Justice
- Air Quality
- Global Climate Change
- Cumulative Effects





### Legend

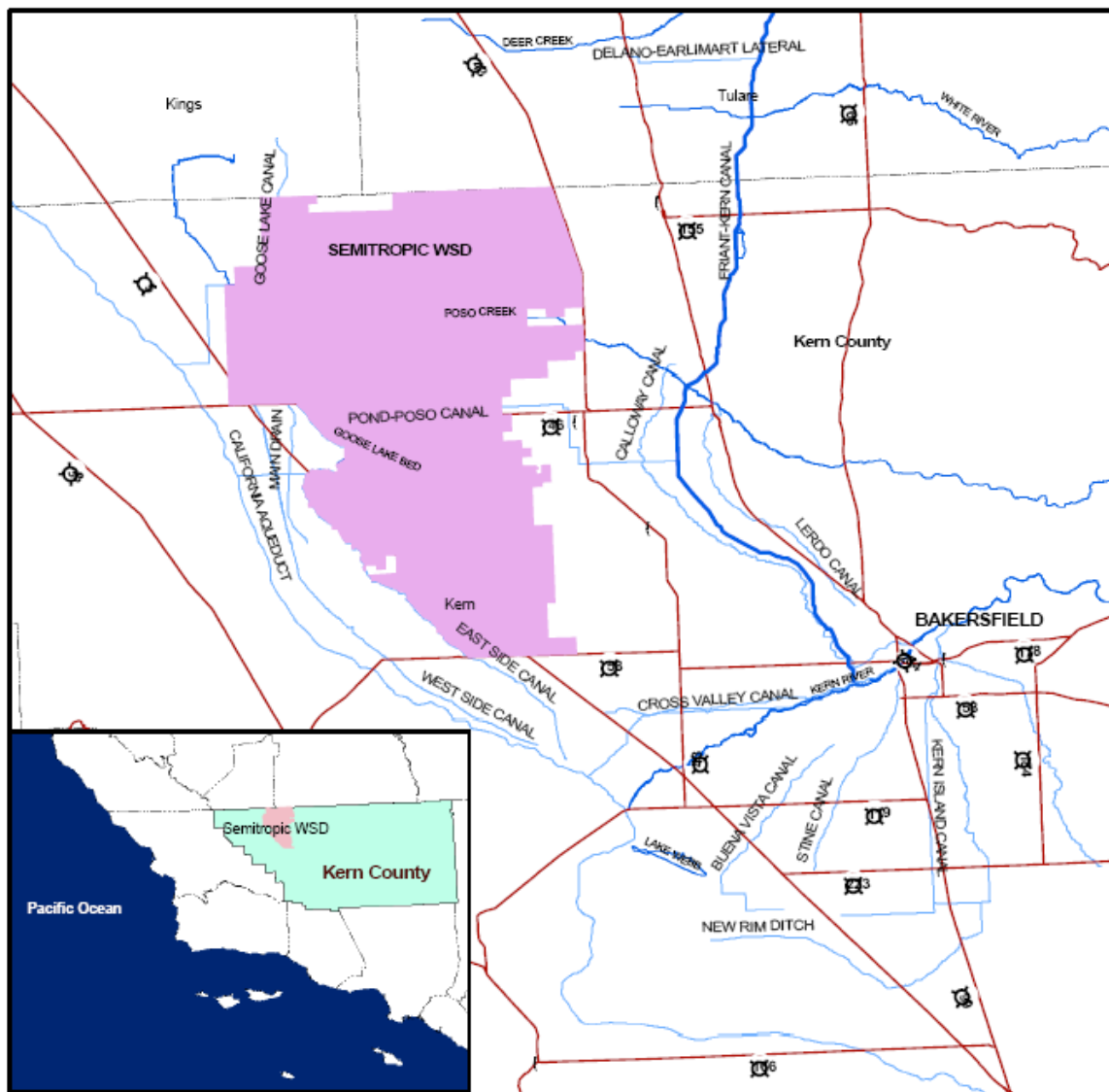
- Westlands W.D. (Incorporated Boundary)
- Highways
- Rivers
- Canals
- Poso Creek

**Figure 1-1**  
**Westlands Water District**  
**General Location Map**



Date: November 17, 2005  
 Path Name: K:\myenv\project\Tracy W.D.mxd

Figure 1-1 Westlands Water District General Location Map



### Legend

- ( ) City locations CA NV
- Canals
- Highways
- Rivers
- Canals
- Semitropic WSD
- Kern County

### *Semitropic Water Storage District General Location Map*



Date: November 17, 2005  
 Path Name: K:\kern\project\Tracy WD.mxd

**Figure 1-2 Semitropic Water Storage District General Location Map (Proposed Action does not include the Stored Water Recovery Unit)**

## Section 2 Alternatives Including the Proposed Action

This EA considers two alternatives: the No Action Alternative and the Proposed Action Alternative. The No Action Alternative would mean the Proposed Action would not take place, and the resulting environmental effects from taking No Action is compared with the effects of permitting the Proposed Action to go forward.

### 2.1 No Action – Continue Present Actions

Under the No Action Alternative, Reclamation would not execute the temporary water service contracts with Poso Creek, LLC for Section 215 water, or approve the banking and return by exchange of the Section 215 water. Poso Creek, LLC would continue to engage in banking opportunities and exchanges to maximize management of its water supply within the facilities available to them either in Semitropic or by utilizing other districts' facilities. Poso Creek, LLC's members would continue to pump additional groundwater and find new ways of increasing a reliable supply to help reduce the impacts of critical dry year shortages.

### 2.2 Proposed Action

#### Section 215 Contract Execution/Banking and Recovery of 215 Water

Reclamation proposes the execution and implementation of a series of one-year temporary water service contracts over a period of 17 years, through 2026, pursuant to Section 215 of the RRA with Poso Creek, LLC, for up to 15,000 AF of water annually. Reclamation anticipates Section 215 water from the Friant Division may be available under certain conditions from year-to-year, so delivery of up to 15,000 AFY of Section 215 water to Semitropic would take place under these conditions. Water delivery under the temporary contracts would be dependent on water availability and declaration at Reclamation's discretion. The Section 215 water would be put to beneficial use within Semitropic in-lieu of groundwater pumping.

Reclamation further proposes to approve the delivery of Section 215 water to Semitropic for banking on behalf of Poso Creek, LLC. The Section 215 water delivered to Semitropic would be used by Semitropic to help meet the crop demands of its farmers at the time of delivery in-lieu of its farmers' pumping groundwater to meet crop demands. The water that would have been pumped from the aquifer in the absence of the Section 215 water becomes Poso Creek, LLC's banked groundwater asset. The banked groundwater (minus 10 percent losses) would ultimately be recovered and delivered via exchange to Poso Creek, LLC's members' lands currently in production within the WWD, that consist of approximately 6,700 acres of permanent plantings and row crops lands. Ten percent of the 215 water delivered to Semitropic would be left behind to compensate for aquifer losses as required by Semitropic's Memorandum of Understanding with the surrounding districts. The return of the banked groundwater may, or may not, occur during the next dry, or critically dry year, but would most likely be recovered within 10 years of the initial storage date. In both delivery and recovery, the water is put to beneficial use to meet agricultural cropping demands.

The Proposed Action may not use the proposed SWRU facilities, but that Poso Creek, LLC utilize its share of the existing Semitropic Groundwater Storage Bank as provided within Poso Creek, LLC's long-term banking agreement with Semitropic, dated April 23, 2007. The Proposed Action would utilize separate, existing banking facilities, evaluated in previous environmental documentation, and established before contemplation of the SWRU. No Semitropic Stored Water Recovery Unit facilities may be used

The Proposed Action is subject to the following conditions:

- 1) The 215 water to be temporarily diverted and stored would only be used for agricultural purposes within the boundaries of Semitropic and WWD as described.
- 2) The water would only be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines.
- 3) The water would not be used to place untitled or new lands into production, nor to convert undeveloped land to other uses.
- 4) The Proposed Action would not affect CVP or State Water Project (SWP) operations; all supplies would be previously scheduled for delivery points south of the Sacramento and San Joaquin River Delta (Delta), and do not require additional Delta exports.
- 5) The movement of the water would not require the construction of any new water diversion or conveyance facilities.

## **Required Conveyance Systems**

### ***Delivery of Section 215 Water to Semitropic***

Up to 15,000 AF of Section 215 water per year, when available, would be delivered from Millerton Lake via the FKC to Semitropic via one of three alternate delivery methods:

- 1) Poso Creek (a natural streambed) - 215 water would be conveyed via the FKC and delivered through existing North Kern Water Storage District (NKWSD) turnouts directly into Poso Creek and conveyed to Semitropic through the natural course of the creek bed.
- 2) Delivery under North Kern Water Storage District (NKWSD)'s name - 215 water would be conveyed via the FKC and delivered through one of the sub-alternatives listed below.
- 3) Existing shared conveyance facilities with Shafter-Wasco Irrigation District (SWID), for in-lieu groundwater banking (Figure 2-1) - 215 water would be conveyed via the FKC and delivered and conveyed through existing SWID conveyance system to Semitropic's conveyance system.

It is understood that Poso Creek, LLC would pursue initial direct delivery to Semitropic, if possible, but if delivery constraints prevented the delivery of Section 215 water, alternative delivery via NKWSD, or SWID, would be explored. A determination would be made based on demand and delivery capacity at NKWSD as to which method would be utilized (alternative 1 or 2). Semitropic's share of the CVP water delivered (up to 15,000 AF) could be delivered to NKWSD for recharge whereby, through an agreement between NKWSD and Semitropic, Semitropic would credit Poso Creek, LLC's account in the Semitropic bank. If this delivery method is unavailable, NKWSD could also take delivery of the transfer water and convey it to Semitropic through the Poso Creek channel. Semitropic would use this water for groundwater recharge for in-district use and credit Poso Creek, LLC's account in the Semitropic bank. Under

either delivery option to Semitropic, Semitropic would take control of the water, subtract 10 percent for aquifer losses, and credit Poso Creek, LLC's account in Semitropic for the balance in storage (if delivery occurs through the Poso Creek channel, NKWSD and Semitropic would cooperate to determine the appropriate actual losses, which may exceed 10 percent and could be as high as 50 percent).

Delivery via Poso Creek channel (alternative 1) may incur up to 50 percent total losses depending on conditions while delivery via NKWSD (alternative 2) and SWID (alternative 3) would incur 10 percent total losses which is typical of groundwater banking required leave behind amounts.

### ***NKWSD Delivery Sub-alternatives***

Four delivery sub-alternatives are available for delivering Section 215 CVP water to NKWSD and Semitropic. These delivery sub-alternatives are described below and shown in Figures 2-1, 2-2, and 2-5.

**Delivery Sub-alternative 1:** Up to 15,000AF of Section 215 CVP water would be released from Millerton Reservoir, conveyed via the FKC, and ultimately delivered to turnouts into NKWSD at mileposts 130.0 and/or 144.9. No other delivery points would be allowed under Delivery Sub-alternative 1.

**Delivery Sub-alternative 2:** Delivery Alternative 2 includes Delivery Alternative 1 and also allows for delivery to the terminus of the FKC for direct input into the Arvin-Edison Water Storage District (AEWSD) canal. Under this alternative, NKWSD would have the flexibility of taking delivery of the Section 215 CVP water at either turnout listed in Delivery Alternative 1 and/or at the terminus of the FKC.

The Section 215 CVP water delivered to the terminus of FKC would only enter the AEWSD storage canal and would not enter the Kern River or any other water delivery facilities. The Section 215 CVP water entering the AEWSD canal would be delivered to meet Kern-Delta Water District's Kern Island demand. The Kern-Delta Water District Kern River water supplies that would have been delivered to Kern Island would then be delivered to NKWSD's Beardsley-Lerdo Canal for ultimate delivery to existing NKWSD spreading facilities.

**Delivery Sub-alternative 3:** Delivery Sub-alternative 3 includes Delivery Sub-alternative 1 and also allows for delivery to the terminus of the FKC for direct input into the Kern River. Under this alternative, NKWSD would have the flexibility of taking delivery of the Section 215 CVP water at either turnout listed in the Delivery Alternative 1 and/or at the terminus of the FKC. The Section 215 CVP water delivered to the terminus of FKC would only enter the Kern River and would not enter the AEWSD canal or any other water delivery facilities. The Kern River Watermaster would take control of the Section 215 CVP water entering the Kern River to allow for an operational exchange for Kern River water. North Kern Water Storage District has two Kern River exchange partners; Kern-Delta Water District and the City of Bakersfield. These two exchange partners would divert the water downstream of the delivery point, off of the Kern River channel, and into their districts for agricultural usage within the CVP place of use. By taking delivery of the Section 215 CVP water, the exchange partners would then allow their Kern River water to be delivered, via this exchange, to NKWSD's diversion at the Beardsley-Lerdo canal

upstream on the Kern River. This Kern River water would flow through the Beardsley-Lerdo canal and into NKWSD's existing eastern recharge facilities. Ultimately, Reclamation would account for the deliveries based upon records from NKWSD for the spreading within NKWSD to be credited to the Semitropic Bank (up to 15,000 AF). Authorization of Delivery Sub-alternative 3 would depend upon the water rights permits and licenses of the United States being broad enough in coverage to allow the use of the Kern River to convey CVP water.

**Delivery Sub-alternative 4:** Delivery Sub-alternative 4 includes Delivery Sub-alternative 1 and also allows for delivery to the terminus of the FKC for direct input into both the AEWS canal and the Kern River. Under this alternative, the Section 215 CVP water delivered could be delivered to the FKC turnouts at mileposts 130.0 and/or 144.9 and also could be delivered to the terminus of the FKC for ultimate delivery into either AEWS canal or into the Kern River. Under this alternative, the exchanges described in Sub-alternatives 2 and 3 would be required.

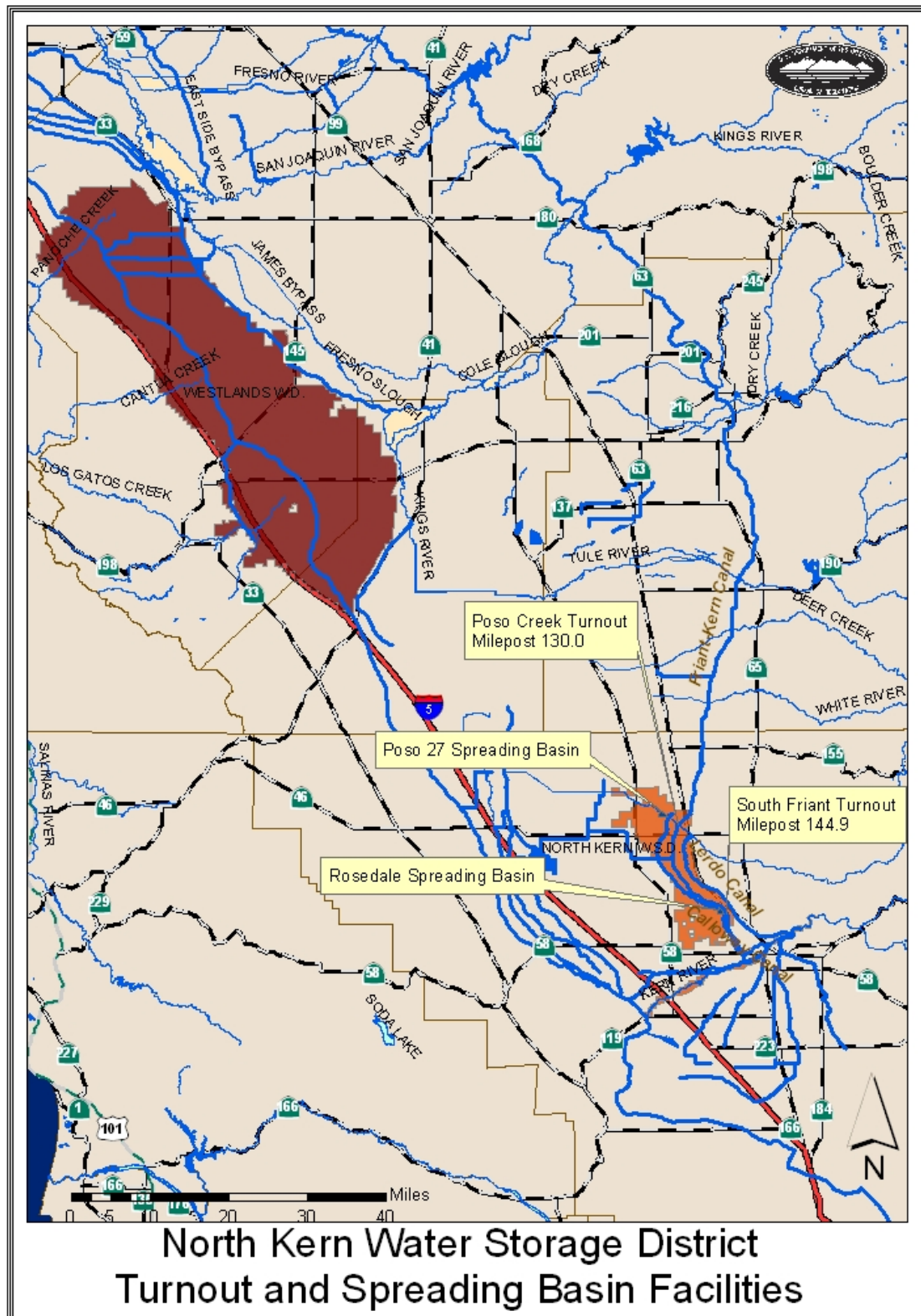


Figure 2-1 Location Map







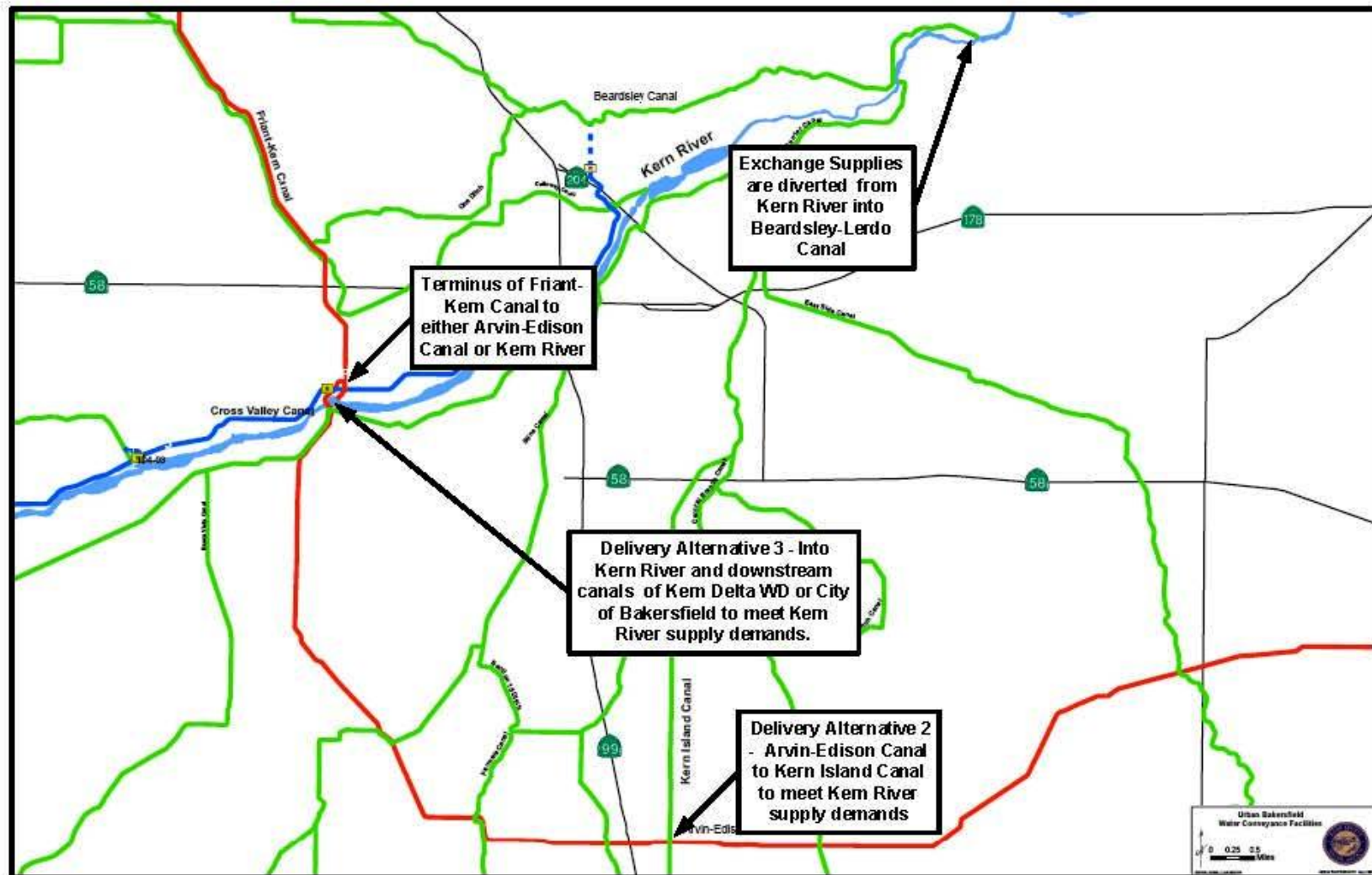


Figure 2-3 Delivery Alternatives

### ***Recovery of Banked CVP Water from Semitropic***

Poso Creek, LLC does not have the necessary facilities to take direct delivery of the banked water. Therefore, the return of Poso Creek, LLC's banked groundwater would occur via an exchange. This exchange may be accomplished through three (3) possible scenarios (Figure 2-3).

First, the banked groundwater could be exchanged for an equal amount of Semitropic's allocation of SWP Table-A water. Semitropic's SWP Table-A water would be released from the San Luis Reservoir and delivered to WWD via their turnouts at Reaches 4-7 of the joint-use San Luis Canal (SLC) portion of the California Aqueduct. An equal amount would be deducted from the Poso Creek and/or WWD water bank account at Semitropic. In exchange, Semitropic would take control of the banked groundwater for use within Semitropic.

Second, Semitropic could pump groundwater stored on behalf of Poso Creek, LLC into the California Aqueduct. The California Department of Water Resources (DWR) could use that water to meet Table-A deliveries to SWP contractors downstream, thereby freeing up Table-A water for delivery to lands owned and/or leased by Poso Creek, LLC's members within WWD. Water would be delivered to WWD via their turnouts at Reaches 4-7 of the joint-use SLC portion of the California Aqueduct. An equal amount would be deducted from Poso Creek, LLC's water bank account at Semitropic.

Third, the banked groundwater could be exchanged for an equal amount of CVP water. Semitropic's SWP Table-A water would be made available at the San Luis Reservoir where it could be exchanged for CVP water from another CVP contractor and delivered to WWD as they would normally receive their CVP supply. An equal amount of water would be deducted from Poso Creek, LLC's water bank account at Semitropic. Or, if the CVP contractor involved in the exchange is also a Semitropic Banking Partner, such as Santa Clara Valley Water District (SCVWD), then the requested amount of the banked groundwater could be transferred to the SCVWD account in exchange for SCVWD delivering a like amount of their CVP water supply to WWD. CVP water would be delivered to WWD as they would normally receive their CVP supply. An equal amount of water would be deducted from Poso Creek, LLC's water bank account and credited to SCVWD's water bank account.

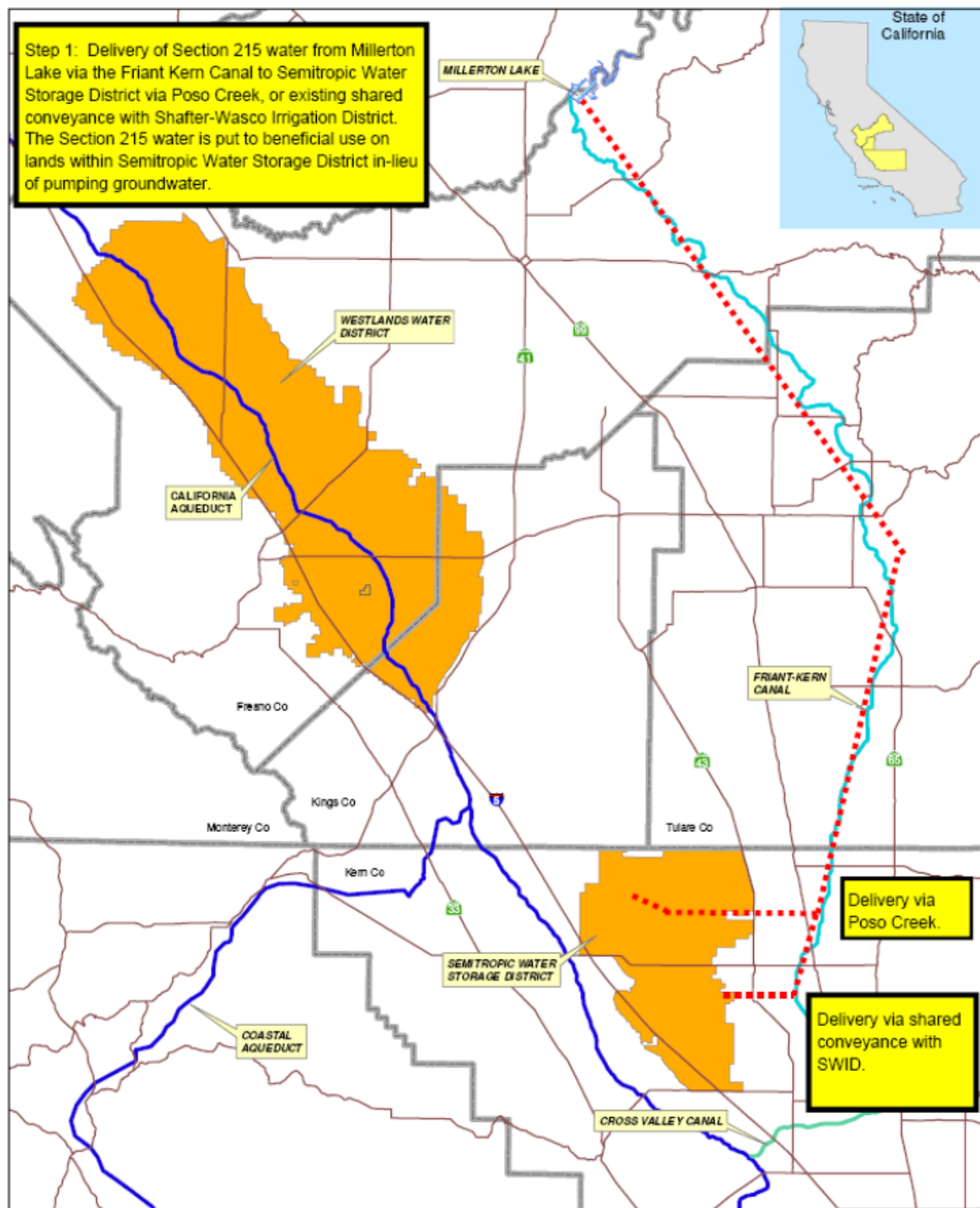


Figure 2-4 Delivery of Section 215 Water from Millerton Lake to Semitropic.

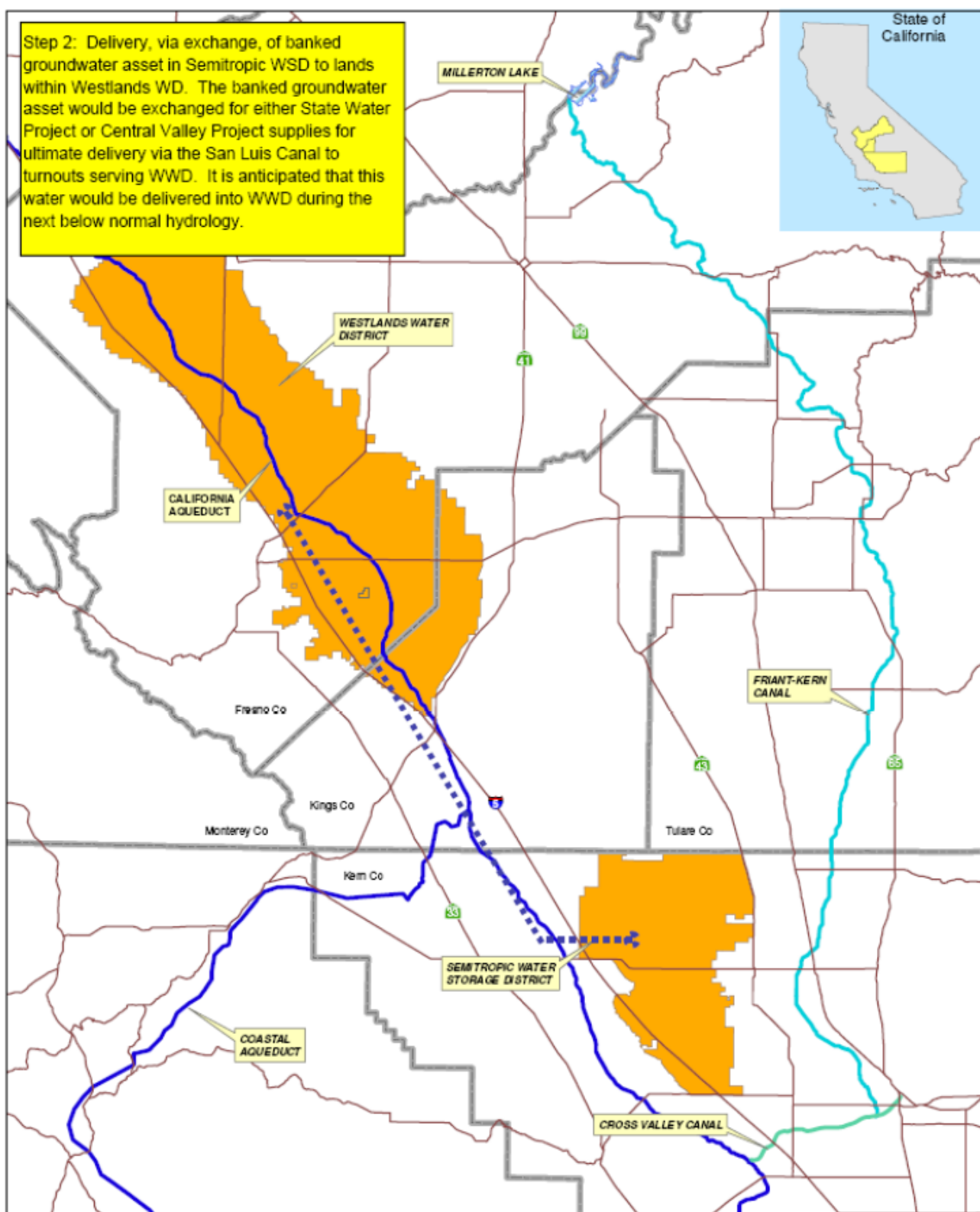


Figure 2-5 Delivery of banked water from Semitropic to Poso Creek, LLC via exchange.

## Section 3 Affected Environment & Environmental Consequences

The potentially affected environment includes AEWS, SWID, NKWS, SCVWD, Semitropic and Poso Creek, LLC's members' lands within WWD as well as state, federal and district owned conveyance facilities that would be involved in the delivery and exchange of this water.

### 3.1 Surface Water Resources

#### 3.1.1 Affected Environment

##### ***Central Valley Project and State Water Project Facilities***

The FKC, a CVP facility, carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for full and supplemental irrigation supplies in Fresno, Tulare, and Kern Counties. Construction of the canal began in 1945 and was completed in 1951. The canal has an initial capacity of 5,000 cubic feet per second (cfs) that gradually decreases to 2,000 cfs at its terminus in the Kern River. The FKC is operated and maintained by the Friant Water Authority on Reclamation's behalf.

Friant Dam, a CVP facility, is located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. The dam controls the San Joaquin River flows, provides downstream releases to meet requirements above Mendota Pool, and provides flood control, conservation storage, diversion into the Madera Canal and FKC and delivers water to roughly a million acres of agricultural lands in Fresno, Kern, Madera, and Tulare Counties in the San Joaquin Valley.

The Jones Pumping Plant is a CVP facility and is operated to supply CVP water to their respective water users in the Delta export area, including agricultural, municipal and industrial (M&I), and wildlife refuge water contractors. Additional CVP facilities include the Delta-Mendota Canal and O'Neill Pumping Plant. These facilities are operated and maintained by the San Luis/Delta-Mendota Water Authority on behalf of Reclamation.

The Banks Pumping Plant, a SWP facility, is owned and operated by the DWR. Additional SWP facilities include the California Aqueduct and South Bay Aqueduct. The SWP and CVP jointly use the San Luis Unit Joint Use Facilities, including the O'Neill Forebay, in which SWP and CVP Delta export supplies would be combined. Additional joint-use facilities include the Gianelli Pumping/Generating Plant, San Luis Reservoir, portions of the California Aqueduct/SLC that serve the CVP San Luis Unit, and the Dos Amigos Pumping Plant. The SWP operates the San Luis Unit Joint Use Facilities in cooperation with the CVP pursuant to consolidated operational forecasts.

The SLC, a joint Federal/State facility, is a concrete-lined canal with a capacity ranging from 8,350 to 13,100 cfs. It is the federally-built and operated section of the California Aqueduct and extends 102.5 miles from the O'Neill Forebay, near Los Banos, in a southeasterly direction to a point west of Kettleman City. The 138-foot wide channel is 36 feet deep, 40 feet wide at the bottom, and lined with concrete (Reclamation 2009).

Both the SWP and CVP are operated pursuant to a complex set of environmental and other operational requirements. Delta export operations are subject to Bay-Delta water quality standards set by the State Water Resources Control Board, various Biological Opinions under the Endangered Species Act (ESA), provisions of the Coordinated Operations Agreement, and various other criteria, plans and agreements.

### ***CVP Contractors***

#### ***Arvin Edison Water Storage District***

AEWSD is located in Kern County in the southeasterly portion of the San Joaquin Valley. AEWSD was formed in 1942. Currently, AEWSD comprises 132,000 acres, of which, approximately 104,000 acres are irrigated. AEWSD entered into its first long-term contract with Reclamation in 1962 and entered into its most recent long-term contract in 2001 for 40,000 AF of Class 1 and 311,675 AF of Class 2 water for a 25-year term.

A large fraction of AEWSD's CVP contract allocation is comprised of Class 2 water supplies, which are highly erratic, variable and typically follow hydrologic conditions (wet years). The district manages this supply by way of water management programs, including but not limited to transfers, exchanges, banking programs with other agencies as well as using its own spreading basins which recharge water to the groundwater table underlying the district. This regulation of water makes supplies more stable and available during times of low surface supplies (dry years) by using groundwater recovery/extraction wells that are typically situated over the same footprint of land associated with the spreading/recharge basins.

In addition, AEWSD has historically engaged in Article 5 exchanges of CVP water with the Cross Valley (CV) Contractors. Originally, up to 128,300 AFY of CV Contractor's CVP water was delivered to AEWSD. This CVP water is diverted from the Delta through the California Aqueduct, to the Cross Valley Canal (CVC) and the CVC/AEWSD canal turnout. In exchange, the Friant CVP water that would have flowed down the FKC to AEWSD is diverted earlier/upstream from the FKC by the CV Contractors. Due to the variances in allocations of Friant and Shasta system CVP water, these exchanges may not balance each year. However, over the long-term the amounts of water exchanged were expected to be comparable. Some of the CV Contractors have terminated their exchange arrangements with AEWSD resulting in a lesser exchanged quantity.

AEWSD takes Friant CVP water from a turnout located at the terminus of the FKC. AEWSD has 45 miles of lined canals and 170 miles of pipeline. AEWSD maintains four spreading/recharge basins to percolate water into the aquifer for storage for later recovery/extraction to supplement deficit surface supplies. Gravity and pressure fed ponds are filled from surface water supplies in "wet" years, while groundwater wells are used to extract stored water in "dry" years.

In October 2007, AEWSD amended and restated its water management program with the Metropolitan Water District of Southern California (MWD), which was originally executed in 1997. AEWSD to bank approximately 250,000 AFY of MWD SWP water supply in the groundwater aquifer for later extraction in drought years. As a part of the program and among other items, AEWSD has completed construction of an Intertie Pumping Plant and pipeline connecting the terminus of its canal to the California Aqueduct. AEWSD has also expanded its South Canal to increase forward flow capacity limitations and provided pumpback structures to

reverse flow the canal to enhance its water banking and exchange program. The Intertie pipeline and South Canal Improvement Project does not create new or additional contractual supplies but provides AEWSO flexibility to efficiently manage its various supplies and point of delivery options.

### ***Shafter Wasco Irrigation District***

SWID was formed in 1937 and is located in Kern County about 20 miles northwest of Bakersfield. Currently, the district is comprised of 38,766 acres, of which 32,000 are irrigated. Included within SWID's boundaries are the cities of Shafter and Wasco covering approximately 2,400 acres.

The district entered into a long-term renewable contract with Reclamation in 1955 for 50,000 AFY of Class 1 and 39,600 AFY of Class 2 water. The District does not have any other long-term surface water supplies. SWID provides water for agricultural use only.

SWID obtains its CVP water supplies from two turnouts on the FKC at mileposts 134.4 and 137.2. The District's distribution system is 0.3 miles of lined canals and 117 miles of pipeline. SWID does not own or operate any water storage facilities or groundwater extraction facilities. Landowners must provide wells to meet irrigation demands when SWID does not have adequate surface water supplies available. SWID has a history of transferring small amounts of water to neighboring districts.

### ***Westlands Water District***

The current WWD was formed in 1952 with the merger of Westplains Water District and the previously existing WWD. WWD encompasses more than 600,000 acres of farmland located in western Fresno and Kings Counties and serves approximately 600 family-owned farms that average 900 acres in size. WWD is a long-term CVP contractor with a contract for 1,150,000 AF. WWD also has other smaller CVP contracts. Cumulatively these contracts provide up to 1,195,000 AF of water (allocation dependent) for delivery to approximately 460,000 irrigable acres, or up to 2.6 AF per acre. Approximately 90,000 acres of irrigable lands within WWD were recently retired from irrigation (Reclamation 2005).

CVP water that is delivered to WWD is pumped from the Delta. It is delivered 70 miles through the Delta-Mendota Canal to San Luis Reservoir. The CVP water is released from San Luis Reservoir and delivered to WWD farmers mainly through the SLC and the Coalinga Canal.

### ***Other Non (CVP)-Contractors***

#### ***Poso Creek, LLC***

Poso Creek, LLC is a mutual water company that filed its articles of incorporation on October 4, 2005. Poso Creek, LLC was formed to manage water in order to ensure water supplies for its members' farmland to keep farming sustainable. Poso Creek, LLC's members' landholdings located in WWD consists of both entities, individuals and one or more revocable trusts (see Table 3-1).

Poso Creek, LLC is not a water district and is not a SWP or CVP contractor. Rather, Poso Creek, LLC was formed to facilitate the purchase and delivery of surplus SWP and CVP supplies to its members' farming operations as WWD water users.

WWD has worked with Poso Creek, LLC to develop and enter into a long-term agreement in which Poso Creek, LLC is a full banking partner invested at 60,000 AF of guaranteed storage capacity in the Semitropic water bank. Poso Creek, LLC, as facilitated by cooperation with WWD, has banked a net balance of CVP water stored within Semitropic of 21,572 AF. This CVP water was banked during 2005-2007 under three separate actions.

A net of 6,156 AF of CVP water was stored under a 2005 banking project (a net of 10,156 AF banked in the fall of 2005, with 4,000 AF of this supply returned to WWD in the fall of 2007 under a WWD request letter dated April 20, 2007 and a Reclamation approval letter dated June 11, 2007). This previous banking action was analyzed in the EA titled, *Storage and exchange of Central Valley Project Water Westland Water District in Semitropic Water Storage District, Final Environmental Assessment, November 2005 (EA-05-96)*, and the return of this water was analyzed in the EA titled, *Storage of Central Valley Project Water from Westland Water District in Semitropic Water Storage District, September 2006 (EA-06-78)*.

In addition, Poso Creek, LLC, as facilitated by cooperation with WWD, also banked a net of 7,980 AF of CVP water in the winter of 2007, which was analyzed in the EA titled, *Storage of Central Valley Project Water from Westland Water District in Semitropic Water Storage District, September 2006 (EA-06-78)*.

Finally, Poso Creek, LLC, as facilitated by cooperation with WWD, also banked a net of 7,436 AF of CVP water in the winter of 2007, which was analyzed in the EA titled, *Madera Irrigation District Transfer, Banking and Exchange of Friant Central Valley Project water to Westlands Water District as Facilitated by North Kern Water Storage District and Kern County Water Agency, January 2007(EA-07-01)*. Thus, Poso Creek, LLC, as facilitated by cooperation with WWD, has a total net balance of CVP water stored within Semitropic of 21,572 AF (6,156AF. + + 7,980 AF, + 7,436 AF).



<b>Poso Creek Water Company, LLC. - Ownership and Acreage</b>	
<b>Owner</b>	<b>Gross Acreage Owned/Leased</b>
Darius Assemi Revocable Trust	898
Farid Assemi Revocable Trust	898
Farshid and Sonia Assemi Revocable Trust	898
Gary G. and Karen E. Robinson Revocable Trust	979
Henry Family Farms, LP	562
Kamm South, LLC.	395
Manning Avenue Pistachios, LLC.	304
The Water Agency, Inc.	1,014
The Dennis Woods and Cheryl Woods Family Revocable Trust of May 2005	164
Todd Henry Revocable Trust	595
<b>Total</b>	<b>6,706</b>

Table 3-1 Ownership and Acreage

***Semitropic Water Storage District***

Semitropic is located in north-central Kern County in the San Joaquin Valley, about 20 miles northwest of the City of Bakersfield. The total area of Semitropic is 220,000 acres with about 159,000 acres irrigated. Semitropic was organized in 1958 for the purpose of supplying supplemental water within its service area boundaries.

Surface water in Semitropic consists of local surface water supplies and water provided under its contract with the Kern County Water Agency for 133,000 AF of SWP water per year. The SWP water is pumped from the Delta and conveyed through the California Aqueduct. The SWP water can be stored in San Luis Reservoir for subsequent conveyance in the California Aqueduct to Semitropic (Semitropic 1997).

***North Kern Water Storage District***

The NKWSD is situated in the San Joaquin Valley portion of Kern County and encompasses about 70,000 acres divided into two project areas. These two project areas are known as “1950 North Kern Water Storage District” project of about 60,000 acres (North Kern hereinafter) and the “1979 Rosedale Ranch Improvement District” project of about 10,000 acres. Both are fully developed to irrigated agriculture, with almonds and grapes accounting for about 50 percent of the cropped area and stone fruit comprising the remaining amount.

***Section 215 Water***

The rules and regulations governing implementation of Section 215 of the RRA are found at 43 CFR 429.16(d). Pursuant to these rules and regulations, a contract for temporary water supplies can be made available by Reclamation under the following conditions:

1. The term of the contract must be for one year or less (this analysis considers a series of one-year contracts over a period of 17 years).

2. The acreage limitation provisions would not apply to the temporary supply of water.
3. An applicable rate would be established.
4. The contract would include other conditions as Reclamation may require.

CVP contractors and non-CVP contractors may execute temporary water service contracts for surplus water from the Friant Division, and such water may be used for irrigation and/or M&I purposes. Section XI of the Operational Guidelines for Water Service, Friant Division, CVP, establishes the following priority of allocation for surplus water made available from the Friant Division:

- a. Long-Term Contractors
- b. Cross Valley Contractors
- c. Other parties within the Friant Division Service area with direct delivery capabilities
- d. CVP Contractors outside of the Friant Division Service area
- e. Other parties

Poso Creek, LLC would be a Priority E contractor and would most likely only receive 215 water in very wet years. Reclamation's current policy is to only execute Section 215 contracts with non-CVP contractors when a declaration of the availability of Section 215 water has been made. Once a contract has been executed, use of the capacity in the FKC is coordinated by the Friant Water Authority as part of the water ordering process for releases from Friant Dam. Section VII of the Operational Guidelines for Water Service, establishes the priority for the use of canal capacity when demands exceed available capacity.

San Joaquin River Restoration will likely make the declaration of Section 215 water less frequent due to water supplies being allowed to flow in the river instead of being diverted at Friant Dam. Additionally, the Recovered Water Account established as part of the San Joaquin River Restoration Settlement Agreement allows CVP contractors impacted by the reduction of contract supplies to have access to Reclamation's San Joaquin River water supplies at a higher priority than non-CVP contractors. This would also decrease the frequency of Section 215 water declarations.

### **3.1.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, surface water supplies would be the same as the existing conditions described above.

#### ***Proposed Action***

Section 215 water is water, such as flood flows, that cannot be stored in Millerton Reservoir for CVP purposes. Poso Creek, LLC would bank Section 215 water, which would be returned via exchange for use to meet existing irrigation demands. Given that Section 215 water is water that can not be stored for CVP purposes, diversion from the San Joaquin River and banking this water is possible. Diversion of this water would not cause impacts to surface water resources as water supplies generally are high before Section 215 water can be taken.

The Proposed Action improves Poso Creek, LLC's members' water supply reliability and operational efficiency, especially during water shortage years. The proposed delivery of Poso Creek, LLC's Section 215 water to Semitropic and the subsequent banking and return delivery

via exchange to Poso Creek, LLC (for the benefit of its members) would occur through existing SWP, CVP, Semitropic, and WWD facilities. No new facilities would be needed as a result of the Proposed Action. As AEWS, SWID and NKWS act only as exchangers and assist with conveyance of the 215 supplies, there is no change to their surface water resources due to the Proposed Action.

Since 215 contracts would be only issued when surplus CVP supplies would be available and when excess conveyance capacity is available, the Proposed Action would not interfere with the normal operations of the SWP or CVP facilities, nor would it impede any SWP or CVP obligations to deliver water to other contractors or to local fish and wildlife habitat.

The 1994 Semitropic Groundwater Banking Project (Banking Program) Environmental Impact Report (EIR) evaluated potential impacts of the Banking Program operations on the timing of diversions from the Delta. The studies conducted under the EIR process determined that the timing of these diversions would be regulated through operational restrictions under a number of agreements and biological opinions designed to protect sensitive fish species and on this basis, Semitropic operations would not significantly impact the timing of diversions from the Delta (Semitropic 1994). The Proposed Action would be regulated by the same operational restrictions. Since all return of banked water would be scheduled with the CVP and SWP operations in compliance with all Delta pumping requirements and the water returned is water that would have been pumped to benefit a CVP or SWP contractor, the Proposed Action would not alter the quantity or timing of diversions from the Delta. Neither Poso Creek, LLC's members nor any CVP or SWP water user would be changing historic land and water management practices as a result of the Proposed Action. Project operations would not vary from the operational conditions found in the No Action Alternative.

### ***Cumulative Impacts***

The Proposed Action would allow Poso Creek, LLC to bank available Section 215 water for future delivery to its members to meet crop demands. There would be no other impacts to canals, facilities, or operations for delivering surface water supplies since the Proposed Action would utilize existing facilities.

## **3.2 Groundwater Resources**

### **3.2.1 Affected Environment**

#### ***Semitropic Groundwater Management***

AEWS, NKWS and SWID are located within the Kern Groundwater Basin. This basin has been identified by DWR as being critically overdrafted. By definition, "a basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts" (DWR 2003). Table 3-2 summarizes the characteristics of the Kern Groundwater Basin.

	<b>Kern</b>
<b>Yield Data</b>	
Storage Capacity, af	11,200,000
Perennial Yield, af/y	1,220,000
Annual Extraction, af/y	1,400,000
Annual Overdraft, af/y	180,000
<b>Production Data</b>	
Well Yield, gpm per well	1,200 - 1,500
Production Depths, feet	300 - 600
Pump Lifts, feet	200 - 250
<b>Water Quality</b>	
Total Dissolved Solids, mg/l	400 - 450

Source: DWR Bulletin 118, October 1995 (via DWR website).

**Table 3-2 Kern Groundwater Basin Characteristics.**

### ***Semitropic Groundwater Management***

During the 1960's, Semitropic developed plans for main conveyance and distribution system facilities to extend from the California Aqueduct to farm delivery locations. Prior to these deliveries, the irrigated agriculture within Semitropic was totally dependent on pumping the underlying groundwater.

In 1995, Semitropic began implementation of the Semitropic Groundwater Banking and Exchange Program (Banking Program). The Banking Program is a long-term water storage program designed to recharge groundwater and reduce overdraft, increase operational reliability and flexibility, and optimize the distribution and use of available water resources between Semitropic and potential banking partners. Under the program, the banking partner would deliver a portion of its unused SWP, CVP or other surface water supplies to Semitropic during periods when such water is available.

Semitropic uses this water in-lieu of pumping groundwater for irrigation or directly to recharge the underlying groundwater basin. Upon request, Semitropic returns the banking partner's previously stored water by exchange. The banking partner's stored water may be pumped from Semitropic's groundwater basin through pumpback facilities into the California Aqueduct and provided to DWR in exchange for SWP water delivered to the partners from the Delta; or Semitropic would retain the stored water for its own use in exchange for an equivalent portion of its SWP water supply. Under the first method (delivery of recovered banked water to the California Aqueduct), the water is delivered to the SWP water supply pool from which deliveries would be made to the banking partners (Semitropic 1997).

Semitropic's Banking Program capacity is 1,000,000 AF. Total program annual withdrawal amounts would be restricted by the size of the pump-back facility, contemporaneous scheduled SWP deliveries to the Semitropic's groundwater bank, and the proportion of the total program capacity that has been contracted to other banking partners. The annual withdrawal capacity

includes up to 133,000 AF of SWP water that could be exchanged within the California Aqueduct, and/or an additional 90,000 AF per year of groundwater extraction to the California Aqueduct. Thus, the return capacity of the original program is a minimum of 90,000 AF per year, and a maximum of 223,000 AFY (Semitropic 1997).

Semitropic anticipates receiving the necessary permits and to construct the second phase of its groundwater banking program. This new unit, the SWRU, would increase storage by 650,000 AF to a maximum of 1.65 million AF and increase recovery capacity by 200,000 AFY for a total guaranteed or pump-back capacity of 290,000 AF per year. This means that the Semitropic Groundwater Storage Bank, including its entitlement exchange capability of up to 133,000 AFY, would be able to deliver up to 423,000 AF per year of dry year yield to the California Aqueduct.

### ***Hydrologic Region***

The Tulare Lake Hydrologic Region comprises the drainage area of the San Joaquin Valley south of the San Joaquin River. The Tulare Lake Hydrologic Region is essentially a closed basin since surface water drains north into the San Joaquin River only in years of extreme precipitation. The San Joaquin Valley Groundwater Basin is the largest basin in the Tulare Lake Hydrologic Region. It is divided into six groundwater sub-basins: Kern County, Tulare Lake, Tule, Kaweah, Kings and Westside sub-basins (DWR 2005).

Semitropic resides within the Kern County groundwater sub-basin. The Kern County groundwater sub-basin includes the Kern River and the Poso Creek drainage areas, as well as the drainage areas of west-side streams in Kern County. The Kern County sub-basin has been identified by DWR as being critically over drafted.

Extensive groundwater recharge programs, or water banks, are in place in the south valley where water districts have recharged several million acre-feet of surplus water for future use and transfer through water banking programs.

Groundwater overdraft leads to land subsidence, which also results in loss of aquifer storage space. This has already caused some damage to canals, utilities, pipelines, and roads in the region. Another effect of long-term groundwater overdraft is groundwater quality degradation. Groundwater overdraft in a basin can produce a gradient that induces movement of water from adjacent areas. If the adjacent areas contain poor quality water, degradation can occur in the basin. Many water agencies have adopted groundwater replenishment programs and have taken advantage of excess water supplies available in wet years, incidental deep percolation, and seepage from unlined canals, in an effort to prevent groundwater overdraft that could result in land subsidence and water quality degradation.

A groundwater monitoring program was established in 1994 to develop information so that any adverse groundwater impacts of the Banking Program could be mitigated. The monitoring program is overseen by a committee made up of Semitropic, adjoining districts (including Buena Vista Water Storage District, Rosedale-Rio Bravo Water Storage District, SWID, NKWSD, and Southern San Joaquin Municipal Utility District), and banking participants. Kern County Water Agency and DWR would be interested parties and participate in committee activities and water scheduling. Monitoring has included water level measurement in monitoring wells and groundwater quality (including salinity and nitrate) evaluations (Semitropic 1994).

In addition, activities of Semitropic and the adjoining activities that affect groundwater conditions have been obtained and compiled. Included would be diversions of surface water into each district, crop surveys and estimates of crop consumptive use, and, where available, groundwater pumping data. A report on the committee's activity and groundwater conditions is published every two years.

### ***Westlands Water District***

WWD is located above the alluvial fan deposits between the eastward dipping marine deposits of the Coast Range and the alluvium filled San Joaquin Valley. The groundwater basin underlying WWD is comprised generally of two water-bearing zones:

(1) an upper zone above a nearly impervious Corcoran Clay layer containing the Coastal and Sierran aquifers and (2) a lower zone below the Corcoran Clay containing the sub-Corcoran aquifer. These water-bearing zones would be recharged by subsurface inflow primarily from the west and northeast, percolation of groundwater, and imported and local surface water. The Corcoran Clay separates the upper and lower water-bearing zones in the majority of WWD. The Corcoran Clay is not continuous in the western portion of WWD.

Groundwater pumping started in this portion of the San Joaquin Valley in the early 1900's. Prior to delivery of CVP water, the annual groundwater pumpage in WWD ranged from 800,000 to 1,000,000 AFY during the period 1950-1968. The majority of this pumping was from the aquifer below the Corcoran Clay, causing the sub-Corcoran piezometric ground water surface to reach the lowest record average elevation of more than 150 feet below mean sea level by 1968. The large quantity of groundwater pumped prior to delivery of CVP water caused a significant amount of land subsidence in some areas. Subsidence permanently reduces the aquifer capacity because of the compaction of the water-bearing sediments. WWD has implemented a groundwater management program to reduce the potential for future extreme subsidence. After implementation of CVP operations in WWD, groundwater pumping declined to about 200,000 AFY, or less, in the 1970's. The reduction in groundwater pumping stabilized groundwater depths and in most portions of WWD groundwater levels significantly recovered.

During the early 1990's, groundwater pumping increased tremendously because of the reduced CVP water supplies caused by an extended drought, and regulatory actions related to the Central Valley Project Improvement Act, ESA, and Delta water quality actions. Groundwater pumping quantities would be estimated to have reached 600,000 AFY during 1991 and 1992 when WWD received only 25 percent of its contractual entitlement of CVP water. The increase in pumping caused a decline in groundwater levels, but has since recovered. Normal or near normal CVP water supplies from 1995 – 1999 have reduced the estimated annual quantity of groundwater pumped to approximately 60,000 AFY, resulting in an increase in water surface elevations. However, since 2000, WWD's water supply has been considerably reduced resulting in increased groundwater pumping to over 200,000 AFY.

WWD estimates the current safe yield of groundwater to be approximately 175,000-200,000 AFY. As described in the previous paragraph, this quantity of groundwater is generally only pumped when other supplemental surface water supplies are not available. This is due to the poorer quality of the groundwater compared to surface water (Reclamation 2004).

### 3.2.2 Environmental Consequences

#### ***No Action***

Under the No Action Alternative there may be impacts to groundwater resources as compare to the baseline. The overdraft in the Tulare Lake Region would continue to result in declining groundwater levels at approximately the current rate, as described in the groundwater section above.

#### ***Proposed Action***

Groundwater banking reduces overdraft by utilizing surface supplies in lieu of groundwater pumping. The Proposed Action would provide water to Poso Creek, LLC (for the benefit of its members) in water supply shortage years, and therefore reduce the need of its members to acquire water supplies to supplement potential shortages by pumping groundwater. The Proposed Action may have a slight positive impact on groundwater quality in WWD due to the groundwater pumping offset in the district. However, the potential quantities of banked and returned 215 water in any year would be small compared to the 200,000 AF of current groundwater pumping. The delivery of up to 15,000 AFY of Section 215 water to Semitropic for in-lieu recharge would help protect the local aquifer from additional overdraft. The potential banking of up to 15,000 AFY of Section 215 water in Semitropic over the next 17 years and the losses of 10 percent of that water left in Semitropic's aquifer would have a small positive impact on groundwater resources in Semitropic.

AEWSD, SWID and NKWSD act only as exchangers and assist with conveyance of the 215 supplies. In some cases this conveyance may lead to additional localized and minor amounts of recharge within the districts depending on the conveyance method employed. There would potentially be a minor positive impact on groundwater resources due to the Proposed Action within AEWSD, SWID and NKWSD.

#### ***Cumulative Impacts***

The delivery of up to 15,000 AFY of Section 215 water to Semitropic for in-lieu recharge would help protect the local aquifer from additional overdraft in the interim period and the majority of the 10 percent loss would be permanently left within the groundwater basin. Similarly the additional surface water deliveries to WWD would help ameliorate the overdraft in WWD's aquifer in a small way as well.

### 3.3 Land Use

#### 3.3.1 Affected Environment

Kern County which includes AEWSD, SWID, NKWSD and Semitropic, is the fourth most productive agricultural county in the nation. As a semiarid region, it must imported water is required to support current farming. It is estimated that 75 percent of the water applied to local crops goes to satisfying actual crop requirements. Significant improvement to irrigation efficiency has been made through the utilization of drip and low volume application methods, as well as careful management of row and border systems. Laser leveling helps achieve uniform distribution. Demand for Kern County's agricultural products is expected to increase in the future, indirectly raising the value of the land.

Land use in Semitropic is primarily agricultural, with alfalfa, cotton, and vegetable comprising the largest acreage under cultivation (Table 3-3). There are no incorporated cities within Semitropic. Semitropic provides water to customers for agricultural use only. Throughout the district, water is used for the following crops (based on a 2003 crop survey) [Semitropic 2009b)].

**Table 3-3 Land Use in Semitropic Water Storage District**

<b>Crop</b>	<b>Acres</b>	<b>Percentage (%)</b>
Alfalfa	27,088.42	16.95
Cotton	25,323.80	15.85
Nut Crops	23,533.49	14.73
Fallowed (temporary crops)	13,152.84	8.23
Vegetables	25,185.79	15.76
Grain/pasture	23,582.11	14.76
Duck ponds	8,838.15	5.53
Grapes	5,248.17	3.28
Waste & Miscellaneous Land	6,563.01	4.11
Fruits	680.35	0.43
Nursery	577.48	0.36
Total Irrigated Acres	159,773.61	100
Undeveloped Native Vegetation	60,785.86	
Total District Acres	220,559.47	

#### ***Fresno County***

Some of Poso Creek, LLC's members' own land in Fresno County. Fresno County is located near the center of California's San Joaquin Valley. In 2000, Fresno County growers grossed over 3.4 billion dollars from the production of more than 200 commercial crops. The City of Fresno is 1 of 15 incorporated cities in Fresno County, all located on the valley floor. Over 60 percent of the County's total population resides in the neighboring cities of Fresno and Clovis.

Leading exports include almonds, cotton, dairy, garlic, grapes, and tomatoes. These commodities would be exported to over 85 foreign countries. The Asian rim receives the majority of the exported commodities. Harvest acreage exceeds 1,000,000 acres. Farmers within the WWD portion of Fresno County are highly efficient. Significant improvement to irrigation efficiency has been made through the utilization of drip and low volume application methods, as well as area management of row and border systems. Laser leveling helps achieve uniform distribution. Researchers have determined that irrigation practices in WWD are among the most efficient in the nation.



**Poso Creek**

Within WWD, Poso Creek, LLC's members manage and farm approximately 6,700 acres (see Table 3-1), consisting of approximately 5,700 acres of land planted to permanent crops and about 1,000 acres of land used for row crops. The majority of the crops would be pistachios and a very small portion is fallowed land.

**3.3.2 Environmental Consequences*****No Action***

Land use conditions under the No Action Alternative would remain the same as the existing land use conditions described above. Members of Poso Creek, LLC would be expected to find an alternative water supply or shift to additional groundwater pumping; therefore, there are no impacts to land use.

***Proposed Action***

Neither Poso Creek, LLC (nor its members), WWD, AEWS, SWID, NKWS nor Semitropic are changing historic land and water management practices. All water would move through existing facilities so there would be no changes to land use due to construction of new facilities. None of the banked water would be used to place fallowed land or any non-agricultural or new lands into production, or to convert land not historically used for agriculture to agricultural uses. Therefore, no difference in environmental impact is expected between the No Action Alternative and the Proposed Action.

***Cumulative Impacts***

The Proposed Action when taken into consideration with other activities has no potential to induce growth in either Semitropic or Fresno County, nor would it result in the cultivation of native untillable land. Semitropic would store the desired water for Poso Creek, LLC using existing facilities. Poso Creek, LLC would be able to access this stored water for its members when needed to sustain existing farming practices and the action provides them with greater flexibility for water deliveries. The Proposed Action when added to other past, present, or future actions, would not contribute to increases or decreases in environmental conditions.

**3.4 Biological Resources****3.4.1 Affected Environment**

The biological resources in WWD, and particularly on Poso Creek Water Company, LLC lands would be similar to biological resources found in other agricultural areas of the San Joaquin Valley. The project area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants.

The irrigated lands in Semitropic would be similar to those described above. The non-irrigated lands in Semitropic includes valley mesquite, saltbush habitat, and riparian-freshwater habitat. The riparian-freshwater habitat is not extensive, however, because there is a general lack of freshwater to sustain the habitat throughout the year. The low lying shrubs and scattered mesquite host a variety of birds, mammals, and insects including mourning dove, California quail, coyotes, black-tailed hare, Audubon's cottontail, lizards and snakes. Minimal marshlands support waterfowl nesting and provide wintering habitat for waterfowl.

The conveyance facilities to be used in the Proposed Action are not managed for fisheries. Some non-native warm-water fish may inhabit the canals. No sensitive or listed fish species occur in the conveyance facilities that would be used in the project.

The following list was obtained on January 8, 2010, by accessing the U.S. Fish and Wildlife (FWS) Database: [http://www.fws.gov/pacific/sacramento/es/spp\\_lists/auto\\_list.cfm](http://www.fws.gov/pacific/sacramento/es/spp_lists/auto_list.cfm). The list is for the following 7 ½ minute U.S. Geological Survey quadrangles, which are overlapped by Semitropic WSD: Lone Tree Well, Hacienda Ranch, Allensworth, Delano West, Lost Hills NW, Lost Hills NE, Wasco NW, Pond, Lost Hills, Semitropic, Wasco SW, Wasco, Lokern, Buttonwillow and Rio Bravo, as well as these quads, which are overlapped by WWD: Stratford, Westhaven, Kettleman City, Huron, Gujuarral Hills, Avenal, La Cima, Coalinga, Burrel, Vanguard, Lemoore, Five Points, Westside, Harris Ranch, Calflax, Tres Pecos Farms, Lillis Ranch, Domengine Ranch, San Joaquin, Helm, Tranquillity, Coit Ranch, Levis, Cantua Creek, Chaney Ranch, Chounet Ranch, Tumey Hills, Monocline Ridge, Firebaugh, Hammonds Ranch and Broadview Farms. See Table 3-4 for the species and critical habitat on the combined list for these quadrangles and species west of the Friant-Kern Canal from along Poso Creek that could occur in the area of effect. Listed fish species and their designated critical habitat in the San Joaquin River system and Delta also are included. Table 3-4 lists threatened and endangered species, and critical habitat.

**Table 3-4 Threatened and Endangered Species and Critical Habitat**

Common Name	Species Name	Federal Status <sup>1</sup>	Effect <sup>2</sup>	Summary Basis for Effect Determination
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	NE	No vernal pools in area of effect.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	NE	No vernal pools in area of effect.
Vernal pool fairy shrimp critical habitat		CH	NE	None in area of effect.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E	NE	No vernal pools in area of effect.
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	NE	No elderberry shrubs in area of effect.
Delta smelt	<i>Hypomesus transpacificus</i>	T	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect.
Delta smelt critical habitat		CH	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect.
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	T	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect.
Central Valley steelhead critical habitat		CH	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect.
Sacramento River Winter-run chinook	<i>Oncorhynchus tshawytscha</i>		NE	No downstream effects from action not already covered; diversion of the 215 water would not affect
Sacramento River Winter-run chinook critical habitat		CH	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect
Central Valley Spring-run chinook	<i>Oncorhynchus tshawytscha</i>		NE	No downstream effects from action not already covered; diversion of the 215 water would not affect
Central Valley Spring-run chinook critical habitat		CH	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect
North American green sturgeon, Southern DPS	<i>Acipenser medirostris</i>	T	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect

North American green sturgeon, Southern DPS critical habitat		CH	NE	No downstream effects from action not already covered; diversion of the 215 water would not affect
California red-legged frog	<i>Rana aurora draytonii</i>	T	NE	No individuals or habitat in area of effect.
California tiger salamander	<i>Ambystoma californiense</i>	T	NE	No vernal pools or seasonal wetlands in croplands; no lands in vicinity of breeding population.
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	E	NE	Croplands do not provide habitat; no conversion of lands from existing uses; no construction of new facilities.
Giant garter snake	<i>Thamnophis gigas</i>	T	NE	No individuals or habitat in area of effect.
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T	NE	No construction of new facilities; no conversion of lands from existing uses.
California Condor	<i>Gymnogyps californianus</i>	E	NE	No individuals or habitat in area of effect.
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	E	NE	Known from Kern National Wildlife Refuge and Buttonwillow Drive and Hiway 58. Proposed Action would not alter land use and no construction would occur.
Giant kangaroo rat	<i>Dipodomys ingens</i>	E	NE	No conversion of lands from existing uses; no construction of new facilities. Tracks along Poso Creek non-specific, generally out of range of species.
Tipton kangaroo rat	<i>Dipodomys nitratoideus nitratoideus</i>	E	NE	No conversion of lands from existing uses; no construction of new facilities. Tracks along Poso Creek non-specific. At time of water delivery, flowage rates should not be affected.
Fresno kangaroo rat	<i>Dipodomys nitratoideus exilis</i>	E	NE	No individuals or habitat in area of effect; species not trapped since 1992 but may still occur on Alkali Sink Ecological Reserve.
Fresno kangaroo rat critical habitat		CH	NE	Occurs only at Alkali Sink Ecological Reserve, outside of area of effect.
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	NE	No construction of new facilities; no conversion of lands from existing uses. Increased water supplies to patches of cropland within vast area of agricultural habitat during water shortage years would not affect the species.
California jewelflower	<i>Caulanthus californicus</i>	E	NE	Does not inhabit croplands or lands fallowed and untilled for less than three years.
Kern mallow	<i>Ermalche kernensis</i>	E	NE	No conversion of lands from existing uses; no construction of new facilities.
Palmate-bracted bird's-beak	<i>Cordylanthus palmatus</i>	E	NE	Does not inhabit croplands or lands fallowed and untilled for less than three years
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	E	NE	No records within 10 years; species not expected to colonize bare soil in disturbed croplands.

<sup>1</sup>T – Threatened, E - Endangered, CH – Critical habitat

<sup>2</sup>NE – No effect to the species or critical habitat determination under ESA

Federal special status species occurring within WWD are the endangered Fresno kangaroo rat, Giant kangaroo rat, Tipton kangaroo rat, the San Joaquin kit fox, endangered California least tern, Western snowy plover, blunt-nosed leopard lizard, California jewelflower and San Joaquin woollythreads. Federal special status species occurring in areas of Kern County adjoining Semitropic include the Tipton kangaroo rat, the San Joaquin kit fox, and the blunt-nosed leopard lizard.

### 3.4.2 Environmental Consequences

#### **No Action**

Under the No Action Alternative there would be no impacts to wildlife and special status species, as no new facilities would be constructed and existing deliveries would continue to operate as has historically occurred.

The conditions of special status wildlife species and habitats under the No Action Alternative would be the same as they would be under existing conditions described in the Affected Environment; therefore, no additional effects to special status species or critical habitats would be associated with this alternative.

#### **Proposed Action**

The Proposed Action would be consistent with the current operations at WWD and Semitropic and would not negatively impact CVP and SWP deliveries. The Proposed Action would not prevent water deliveries to refuges or preclude the DWR or other CVP and/or SWP Contractors from negotiating actions to obtain water from willing sellers in accordance with the Central Valley Project Improvement Act. Critical habitat has been designated by the U.S. Fish & Wildlife Service for vernal pool species; one unit of critical habitat for vernal pool fairy shrimp is within a short distance (approximately 5 miles) of the boundaries of Semitropic, and another is within about 25 miles, but neither is within the area that would be affected by the Proposed Action. There would be no change in availability or quality of habitat for California least tern because no waterways or nesting areas will be created, destroyed or modified and this species would not be affected. Furthermore, because of reasons identified in Table 3-4, there would be no effects to the special status species in WWD or elsewhere.

The diversion of 15,000 AF of water into the Friant-Kern Canal and subsequently to STWSD under Section 215 was modeled under current baseline conditions, including requirements dictated by the San Joaquin River Settlement. The effect of the 215 diversion on mean monthly average flows (cubic feet per second) in the San Joaquin River downstream of the Merced River were analyzed. The potential for flow reduction of at least 20% would occur rarely, less than 1% of the time. Because background flows are typically markedly higher than base flows when 215 diversions occur, and because there are considerable flow inputs to the San Joaquin River below the mouth of the Merced River (e.g from the Stanislaus and Tuolumne rivers), when such a rare event is considered, to marginal flow change from the Proposed Action is not expected to have an effect on listed species or designated critical habitat, including for the salmonids, Green sturgeon, or Delta smelt.

The water delivered to Poso Creek, LLC's members' lands in WWD would be used to irrigate almond and pistachio orchards and row crop lands that would be already in cultivation. No new facilities would be required to bring the water to these locations, and no native or untilled lands would be brought into production by the Proposed Action. Orchards provide some habitat for the San Joaquin kit fox, but the habitat quality is relatively poor, and would not be affected by the Proposed Action. Within WWD boundaries, none of the records from the California Natural Diversity Database are within the boundaries of the lands to which the water would be applied.

The Proposed Action involves only banking within existing Semitropic Banking Program facilities. The Proposed Action is unrelated to the construction, operation, or maintenance of the SWRU and the SWRU facilities may not be used for any aspect of the Proposed Action. There

would be no interrelated or interdependent relationship between the Section 215 water Poso Creek, LLC would provide to Semitropic and the SWRU, and therefore, there would be no effects to biological resources associated with the Proposed Action as a result of any future construction or operation of the SWRU.

Based on the above effects analysis, Reclamation has determined that the Proposed Action would have no effect on threatened and endangered species or their designated critical habitats and no further consultation is required under Section 7 of the ESA.

### ***Cumulative Effects***

The Proposed Action when added to other existing and proposed actions does not contribute to cumulative impacts to wildlife resources. No permanent facilities would be constructed that would prevent movement of species or loss of foraging opportunities. The Proposed Action when added to other temporary or permanent water service actions does not contribute or result in additional effects to listed species. The action area is not within the drainage impaired lands identified by the San Luis Drainage Feature Re-evaluation (SLDFR) project, and is not covered by the Biological Opinion issued by the U.S. Fish & Wildlife Service for that project. The actions that may be taken under SLDFR would not be affected by, and would not affect, the actions under the Proposed Action for this project. The SLDFR project's Final Alternative (which has not been identified at this date) in WWD would likely be east of this project area, and would not extend to the lands under cultivation by Poso Creek, LLC's members.

## **3.5 Cultural Resources**

### **3.5.1 Affected Environment**

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP). Those resources that are on, or eligible for inclusion in, the NRHP are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

The San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations

that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably destroyed many Native American cultural sites.

### **3.5.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, there are no impacts to cultural resources since there would be no change in operations and no ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

#### ***Proposed Action***

The Proposed Action is the type of activity that has no potential to affect historic properties. There will be no modification of water conveyance facilities and no activities that will result in ground disturbance. This action is administrative in nature and has no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). Because there is no potential to affect historic properties, no cultural resources would be impacted as a result of implementing proposed action.

#### ***Cumulative Impacts***

The Proposed Action when added to other activities would not contribute to cumulative impacts to archeological or cultural resources.

## **3.6 Indian Trust Assets**

### **3.6.1 Affected Environment**

Indian trust assets (ITA) would be legal interests in assets that would be held in trust by the U.S. Government for federally recognized Indian tribes or individual Indians. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. "Assets" would be anything owned that holds monetary value. "Legal interests" means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITA cannot be sold, leased or otherwise alienated without United States' approval. Trust assets may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments would be examples of lands that would be often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by Indian tribes, or individual Indians by treaty, statute, or Executive Order.

The nearest ITA is a Public Domain Allotment which is approximately 2 miles east northeast of the Proposed Action location.

## **Environmental Consequences**

### ***No Action***

Under the No Action Alternative there would be no impacts to ITA, as there are no ITA, Indian Reservations, or public domain allotments found within the water districts involved.

### ***Proposed Action***

There are no tribes possessing legal property interests held in trust by the United States in the water involved with this action, nor is there such a property interest in the lands designated to receive the water proposed in this action, therefore ITA would be not affected by this action.

### ***Cumulative Impacts***

The Proposed Action when added to other activities would not contribute to cumulative impacts to ITA.

## **3.7 Socioeconomic Resources**

### **3.7.1 Affected Environment**

As stated earlier, WWD and Semitropic are comprised primarily of irrigated agricultural lands. There are many communities across the area where farm workers reside. There are many small businesses that support agriculture such as feed and fertilizer sales, machinery sales and service, pesticide applicators, transport, packaging, and marketing.

Kern County's economy is based on the diverse assets of agriculture, oil, aerospace and transportation and warehousing services. Despite this seeming economic diversification, the overall economic performance of the county has been mixed in recent years when compared to the State of California and other counties, although noticeable progress has been made overall. This is due in part to the cyclical and uncertain nature of oil and aerospace which would be often affected by factors beyond Kern County. Further, the agricultural sector consists mostly of low paying and often seasonal employment which limits the positive multipliers within the economy.

Lower business costs, the availability of land, and relatively lower costs of living also add to Kern's attractiveness and competitive advantage. On the other hand, lackluster new business growth, lower educational attainment and skills gaps, out migration of young people, a high incidence of low-to-moderate income residents, and poor air quality issues, especially within the San Joaquin Valley, would be noted disadvantages in Kern County (Kern 2005).

Fresno County is centrally located between the San Francisco Bay area and Los Angeles and provides rapid access to West Coast markets via two major freeways – Interstate 5 and Highway 99. Fresno County's economy is based on its agricultural output and the distribution network that keeps all products moving to destinations throughout the western United States. Over 500 trucking and warehousing firms operate in the area and two railways operate intermodal facilities in the county serving connections to all points north, south, and east (Fresno 2004).

### **3.7.2 Environmental Consequences**

#### ***No Action***

The No Action Alternative would have no impact on socioeconomic resources as existing conditions would remain the same.

### ***Proposed Action***

There would be slight if any social or economic impacts. Seasonal labor requirements would not change, and agriculturally dependent businesses would not be affected. No adverse effects on public health and safety would occur. The Proposed Action would provide a relatively small amount of water to sustain existing croplands for Poso Creek, LLC's members via additional surface water supplies. Businesses rely on these crops to maintain jobs. The Proposed Action would continue to support the economic vitality in the region. Maximizing the use of operational exchanges is beneficial to local economic conditions and agricultural employment.

### ***Cumulative Impacts***

Approval would not have highly controversial or uncertain environmental effects or involve unique or unknown environmental risks. Approval of the project is not related to other actions with individually minor but cumulatively significant environmental effects.

This exchange provides options for managing the finite water supplies. This action would reduce energy use and transportation losses. Managing the finite water supplies and providing lower priced water does not result in more than minor profits for the contractors and landowners. Farmers must compete in a highly competitive agricultural market and crop prices fluctuate on a wide scale. Historically, the water contractors have sought ways to provide water at the most economical price to their customers to offset the dramatic changes in the agricultural market.

## **3.8 Environmental Justice**

### **3.8.1 Affected Environment**

As mandated by Executive Order 12898, published February 11, 1994, entitled, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations", this EA addresses potential environmental justice concerns. The population of some small communities typically increases during late summer harvest. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America. Table 3-5 characterizes the community by county (Census Bureau 2009).

**Table 3-5 Community Characteristics by County**

	<b>Fresno County</b>		<b>Kings County</b>		<b>Kern County</b>		<b>California</b>	
<b>General Characteristics</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>	<b>Number</b>	<b>%</b>
White	738,232	81.2	125,293	84.0	683,591	85.4	28,155,606	76.6
Black or African American	52,731	5.8	12,380	8.3	51,229	6.4	2,462,697	6.7
American Indian/Alaskan Native	18,183	2.0	3,281	2.2	14,408	1.8	441,080	1.2
Asian	79,096	8.7	4,773	3.2	32,018	4.0	4,594,583	12.5
Native Hawaiian/Pacific Islander	1,818	0.2	447	0.3	1,601	0.2	147,027	0.4
Hispanic/Latino (of any race)	442,758	48.7	73,534	49.3	377,016	47.1	13,452,940	36.6
Two or more races	19092	2.1	2,983	2.0	16,810	2.1	955,673	2.6
Average household size	3.09		3.18		3.03		2.87	
Median household income	\$46,547		\$45,087		\$46,639		\$59,928	
Individuals below poverty level		20		19.4	144,883	18.1		12.4

### **3.8.2 Environmental Consequences**

#### ***No Action***



The No Action Alternative would have no impact on environmental justice. Semitropic would continue to engage in banking opportunities and exchanges to maximize management of their water supply within the facilities available to them either in district or utilizing other district's facilities as approved by Reclamation and DWR. Conditions would be the same as the existing conditions; therefore, no additional impacts would be associated with this alternative.

### ***Proposed Action***

The Proposed Action would allow Section 215 water to be conveyed through existing facilities to an established water banking facility. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations.

### ***Cumulative Impacts***

The Proposed Action would not have any measurable impact on minority or disadvantaged populations within Semitropic or Poso Creek, LLC's members' lands within WWD in conjunction with other activities.

## **3.9 Air Quality**

### **3.9.1 Affected Environment**

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in California. Air basins share a common "air shed," the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley experiences episodes of poor atmospheric mixing caused by inversion layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground.

Despite years of improvements, the SJVAB does not meet state and federal health-based air quality standards for Volatile Organic Compounds/reactive organic gas (VOC/ROG) and nitrogen oxide (NO<sub>x</sub>) but does for particulate matter (PM)<sub>10</sub> and carbon monoxide (CO). In order to protect health, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required by federal law to adopt stringent control measures to reduce emissions.

Section 176 (C) of the Clean Air Act [CAA] (42 USC 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the Federal Clean Air Act (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact, conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 Code of Federal Regulations (CFR) 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity

regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain de minimis amounts thus requiring the federal agency to make a determination of general conformity.

In addition to Federal air quality regulations, the National Environmental Policy Act (NEPA) requires projects to additionally meet state and local standards. According to the Kern County California Environmental Quality Act Implementation Document (2004), Projects located in the SJVAPCD will be subject to the following significance thresholds (see below) specified for each air district, in addition to Federal standards. Projects that exceed the following thresholds shall be considered significant.

### **3.9.2 Environmental Consequences**

#### ***No Action***

Semitropic would continue to engage in banking opportunities and exchanges to maximize management of their water supply within the facilities available to them either in district or utilizing other district's facilities as approved by Reclamation and DWR. Baseline trends in air quality can reasonably be expected to continue if no action is taken. Total air emissions are expected to increase, even assuming that emissions allowable from individual and mobile sources would be regulated more strictly. Increased population and associated increases in the need for more vehicles would be a contributor to the rise in pollutant emissions. Therefore, the No Action Alternative would have minimal effects on air quality.

#### ***Proposed Action***

Under the Proposed Action a series of one-year temporary water service contracts would be executed with Poso Creek, LLC, for up to 15,000 AF of water annually. Electric pumps would be used to convey this water. These pumps would not emit pollutants at the pump; the source of the pollutants originates at the power plant. Power plants are permitted based on their maximum operating potential. The additional electricity would not result in the power plant exceeding operating capacity, and, thus, the applicable emissions permit. A majority of power is derived from fossil fuel combusted at power plants to generate electricity. CO<sub>2</sub> is the primary pollutant emitted as a result of the oxidation of the carbon in the fuel. NO<sub>x</sub> and PM<sub>10</sub> are also emitted.

In summary, the Proposed Action would not cause an adverse impact to air quality in the SJVAB or exceed applicable standards. Therefore, there would be no adverse impacts to air quality from the Proposed Action.

## **3.10 Global Climate Change**

### **3.10.1 Affected Environment**

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (Environmental Protection Agency [EPA] 2008a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG such as carbon dioxide (CO<sub>2</sub>) occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide, and fluorinated gasses (EPA 2008).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO<sub>2</sub> and MH<sub>3</sub>, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. There are uncertainties associated with the science of climate change (EPA 2008b).

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

### **3.10.2 Environmental Consequences**

#### ***No Action***

Implementation of the No Action Alternative would minimally affect the composition of the atmosphere and therefore would have no direct or indirect effects to climate.

#### ***Proposed Action***

The Proposed Action is the approval of the execution and implementation of a series of one-year temporary water service contracts over a period of 17 years, through 2026, pursuant to Section 215 of the RRA with Poso Creek, LLC, for up to 15,000 AF of water annually. The Proposed Action would not include any change on the composition of the atmosphere and therefore would have no direct effects on changes in climate.

Water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility and therefore water resource changes due to climate change would be the same with or without the Proposed Action.

#### ***Cumulative Impacts***

The Proposed Action, when added to other past, present, or future actions, would not contribute to significant increases or decreases in environmental conditions. These water service actions would only occur when Section 215 water is available and only under certain conditions from year-to-year. Therefore, there would be no cumulative impacts as a result of the Proposed Action.

## **Section 4 Consultation and Coordination**

### **4.1 Fish and Wildlife Coordination Act (16 USC § 651 et seq.)**

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The implementation of the CVPIA has been jointly analyzed by Reclamation and the U.S. Fish and Wildlife Service and is being jointly implemented. The Proposed Action does not involve construction of a water development project and therefore the FWCA does not apply.

### **4.2 Endangered Species Act (16 USC § 1531 et seq.)**

Section 7 of the ESA requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of federally endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined the Proposed Action would have no effect on threatened and endangered species or their critical habitats and no further consultation is required under Section 7 of the ESA. This determination is based on the fact that the diversion of this water would not change pumping conditions in the Delta. Land uses would not change and no construction would occur. Reclamation and DWR would continue to make decisions whether to pump and convey water based on external conditions independent of the Proposed Action. Water is pumped from the Delta in accordance with the criteria and procedures for conducting combined CVP and SWP operations and other regulatory requirements to protect fish and water quality resources. Similar amounts of water would be pumped and conveyed by Reclamation and DWR based on demands and capacity.

The Proposed Action would support existing land uses and conditions. No native lands would be converted or cultivated with CVP water. Therefore, the Proposed Action would have no effect on federally listed threatened or endangered species or their designated habitats.

### **4.3 National Historic Preservation Act (16 USC § 470 et seq.)**

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Due to the nature of the Proposed Action, there will be no effect on any historical, archaeological, or cultural resources and no further compliance actions are required.

### **4.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)**

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest,

egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg would be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

## **4.5 Clean Water Act (16 USC § 703 et seq.)**

### ***Section 401***

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

### ***Section 404***

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

## **4.6 Clean Air Act (42 USC § 7506 (C))**

Section 176 of the CAA requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP’s purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

Electric motors would be used to pump this water. There are no emissions from electrical engines; therefore, a conformity analysis is not required under the CAA and there would be no impact on air quality.

## 4.7 Executive Order 11988 – Floodplain Management and Executive Order 11990 - Protection of Wetlands

Executive Order (EO) 11988 requires Federal agencies to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, and health and welfare among other activities. To accomplish these goals agencies would be instructed to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, EO 11990 places similar requirements for actions in wetlands. Although the project does reduce potential flood flows which meets the goals of the EO, the Proposed Action would not affect the flood plain itself and therefore the Proposed Action would not require Reclamation to take the actions required in EO 11988. The Proposed Action would not affect wetlands and therefore the Proposed Action would not affect either EO.

## Section 6 List of Preparers and Reviewers

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